

CLAIMS

What is claimed is:

1. A system for a device having a printed circuit board inside it, comprising:
a motion sensor mounted on said printed circuit board inside said device,
said motion sensor having a motion signal output; and
a detection circuit connected to said motion signal output and having a
trigger signal output.
2. The system of Claim 1, wherein said system is a wake-up system.
3. The wake-up system of Claim 2, wherein said trigger signal output is a
wake-up signal output.
4. The wake-up system of Claim 2, wherein said device is an input device.
5. The system of Claim 1, wherein said motion sensor is a mechanical
motion sensor.
6. The system of Claim 5, wherein said motion sensor is a tilt sensor.
7. The wake-up system of Claim 4, wherein said input device is a mouse.
8. The wake-up system of Claim 7, wherein said mouse is an optical mouse.
9. The wake-up system of Claim 4, wherein said input device is wireless.
10. The system of Claim 6, wherein said tilt sensor comprises an electrical
switch comprised of:

a ball contact; and

at least one stationary contact on said printed circuit board.

11. The system of Claim 10, wherein said stationary contact is printed on said printed circuit board.

12. The system of Claim 10, wherein said stationary contact has a hole in the center.

13. The system of Claim 10, wherein the stationary contact has an inclined surface toward its center.

14. The system of Claim 10, wherein the sensitivity of said tilt sensor is adjustable during manufacture.

15. The system of Claim 14, wherein the sensitivity of said tilt sensor is adjusted by the size of the hole.

16. The system of Claim 14, wherein the sensitivity of said tilt sensor is adjustable by the size of the ball contact.

17. The system of Claim 14, wherein the sensitivity of said tilt sensor is adjustable by the weight of the ball contact.

18. The system of Claim 14, wherein the sensitivity of said tilt sensor is adjustable by the conductivity of the ball contact.

19. The system of Claim 10, wherein said tilt sensor comprises plural stationary contacts.

20. The system of Claim 19, wherein the plural stationary contacts are arranged as pieces of a pie.

21. The system of Claim 19, wherein there are 2 stationary contacts.

22. The system of Claim 19, wherein there are 4 stationary contacts.

23. The system of Claim 19, wherein there are 6 stationary contacts.

24. The system of Claim 19, wherein there are 8 stationary contacts.

25. The system of Claim 10, wherein said ball contact is a conductive ball.

26. The system of Claim 10, wherein the ball contact is gold-plated.

27. The system of Claim 10, wherein said stationary contact is gold-plated.

28. The system of Claim 1, wherein said motion sensor further includes a housing and said housing is sealed.

29. The system of Claim 28, wherein said housing is sealed with an O-ring.

30. The system of Claim 28, wherein said housing is sealed with an adhesive.

31. The system of Claim 1, wherein said motion sensor comprise an electrical switch and said detection circuit detects a change in state of whether said switch is opened or closed.

32. The system of Claim 31, wherein said detection circuit comprises:

a motion detector that determines if there is a change in the opened or closed state of a motion sensor switch; and

a signal processing circuit having a latch circuit that creates a signal of a particular level for a period of time to generate a wake-up signal.

33. The system of Claim 32, wherein the motion detector of said detection circuit comprises two invertors for amplifying and converting a motion signal pulse from the motion sensor.

34. The system of Claim 32, wherein the motion detector of said detection circuit comprises a single inverter that can detect a low signal from the motion sensor.

35. An input device comprising:
a printed circuit board;
a motion sensor mounted inside the input device on the printed circuit board, said motion sensor having a motion signal output; and
a detection circuit responsive to said motion signal and having a wake-up signal output.

36. A method of waking-up an input device having a printed circuit board inside it, comprising:

mounting a motion sensor directly on said printed circuit board;
outputting a motion signal from said motion sensor;
providing a detection circuit responsive to said motion signal; and
outputting a wake-up signal from said detection circuit to circuitry of said input device to wake-up said input device.

37. The method of Claim 36, wherein said input device further comprises a microprocessor and said microprocessor wakes-up the input device in response to said wake-up signal from said detection circuit.